

How Recommender Systems in Technology-Enhanced Learning depend on Context

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TEL context

Spectrum of Learning

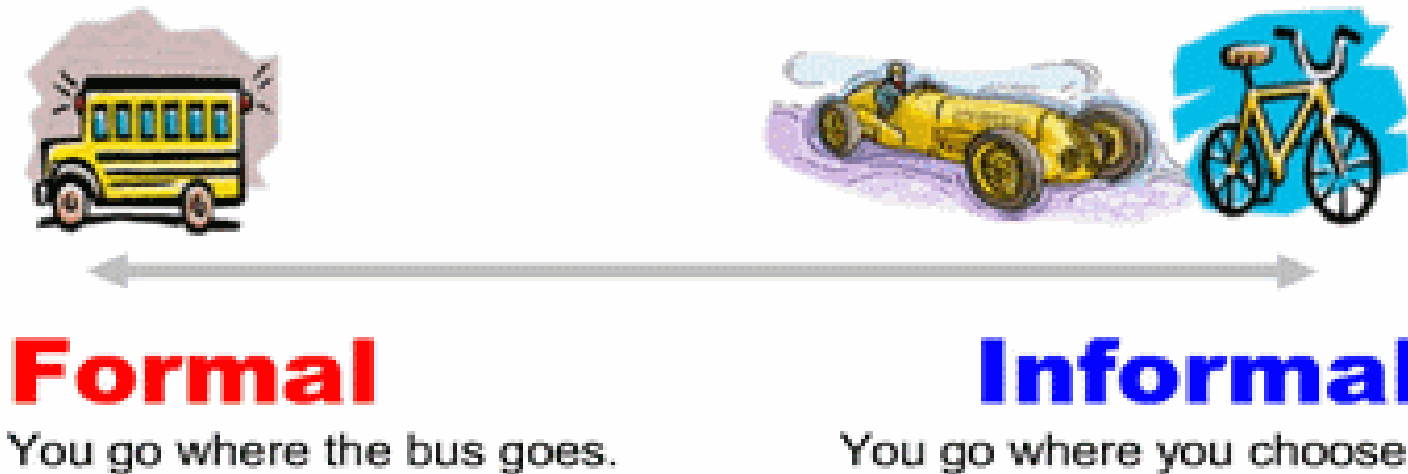


Figure by : Cross, J. (2006). *Informal learning: Rediscovering the natural pathways that inspire innovation and performance.* San Francisco, CA: Pfeiffer.



Formal learning

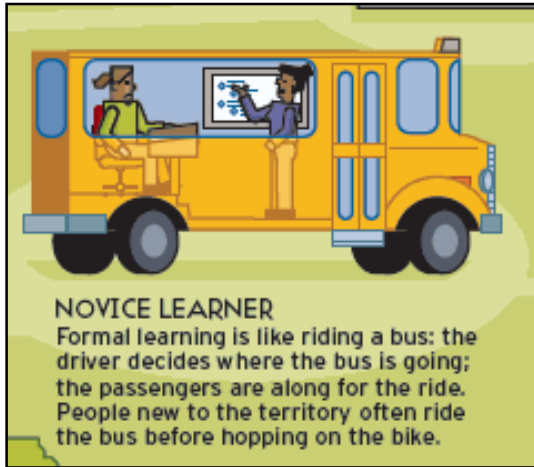
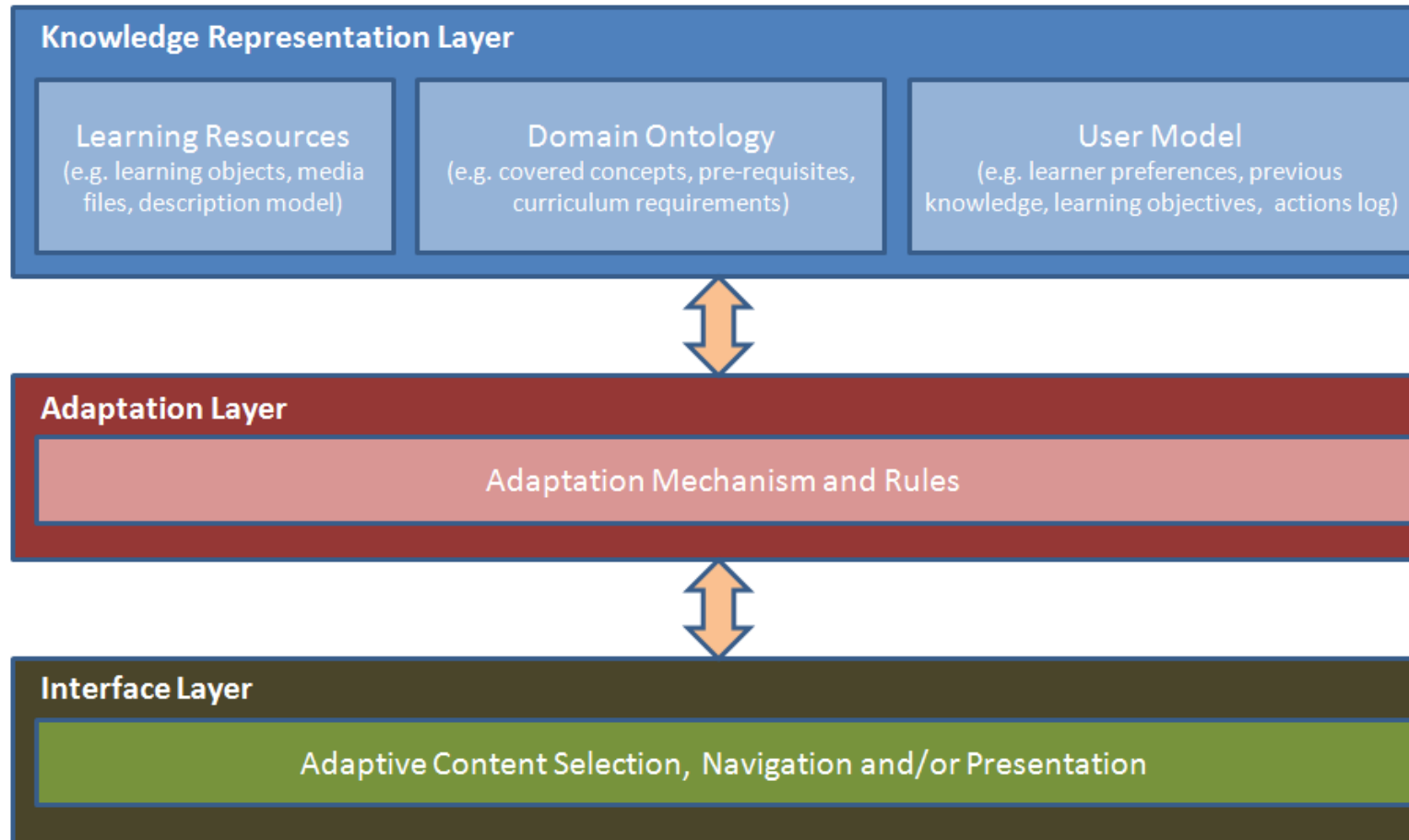


Figure by:
Cross, J. (2006)

- are learning offers from educational institutions.
- is imbedded into a curriculum or syllabus framework.
- is highly structured.
- leads to a specific accreditation.
- involves domain experts to guarantee quality.



Formal learning = structured



Generic layers within a simplified architecture of an educational AEH
(Karampiperis & Sampson, 2005)



Informal learning

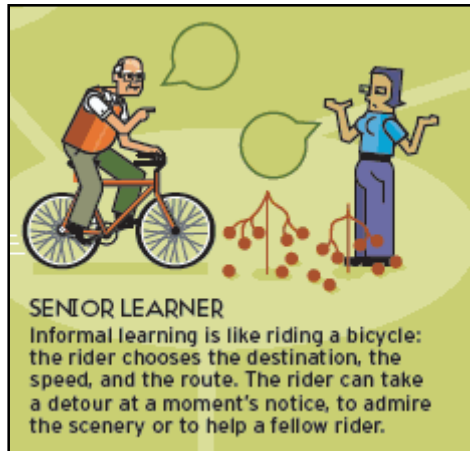
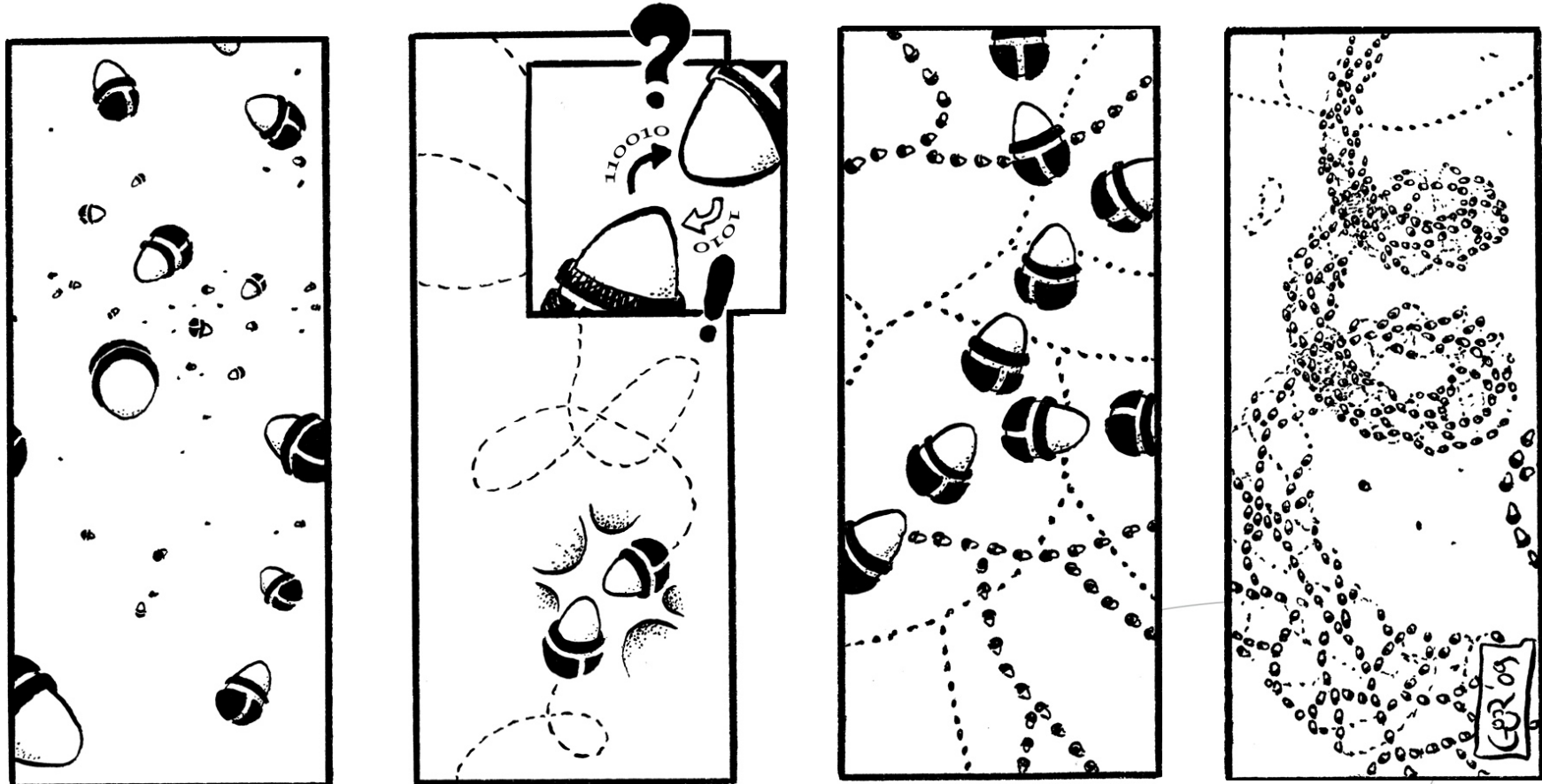


Figure by:
Cross, J. (2006)

- content is provide from different sources.
- happens outside formal educational settings (e.g. related to work or leisure time.
- is less structured (in terms of learning goals, study time or learning support).
- does not lead to a certain accreditation.



Informal learning = emergence



Context variables

Formal learning

- Curriculum (Closed-Corpus)
- Teacher directed
- Predefined learning resources, learning goals
- Maintenance

Informal learning

- Learning resources from different providers (Open-Corpus)
- More self-directed learning goals
- Responsible for own learning pace / path
- Lack of maintenance



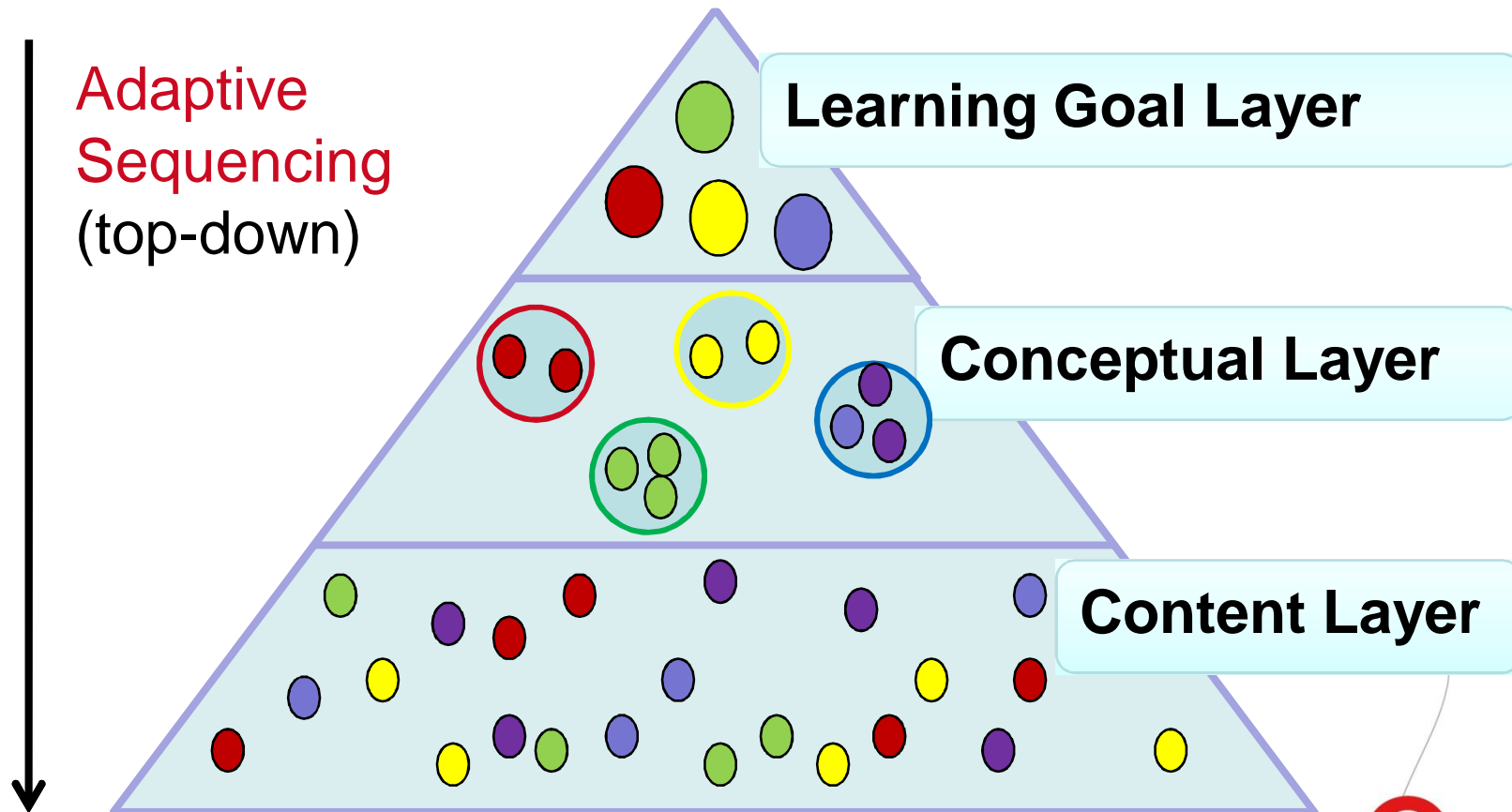
Recommendation approaches

Formal and
Informal Learning

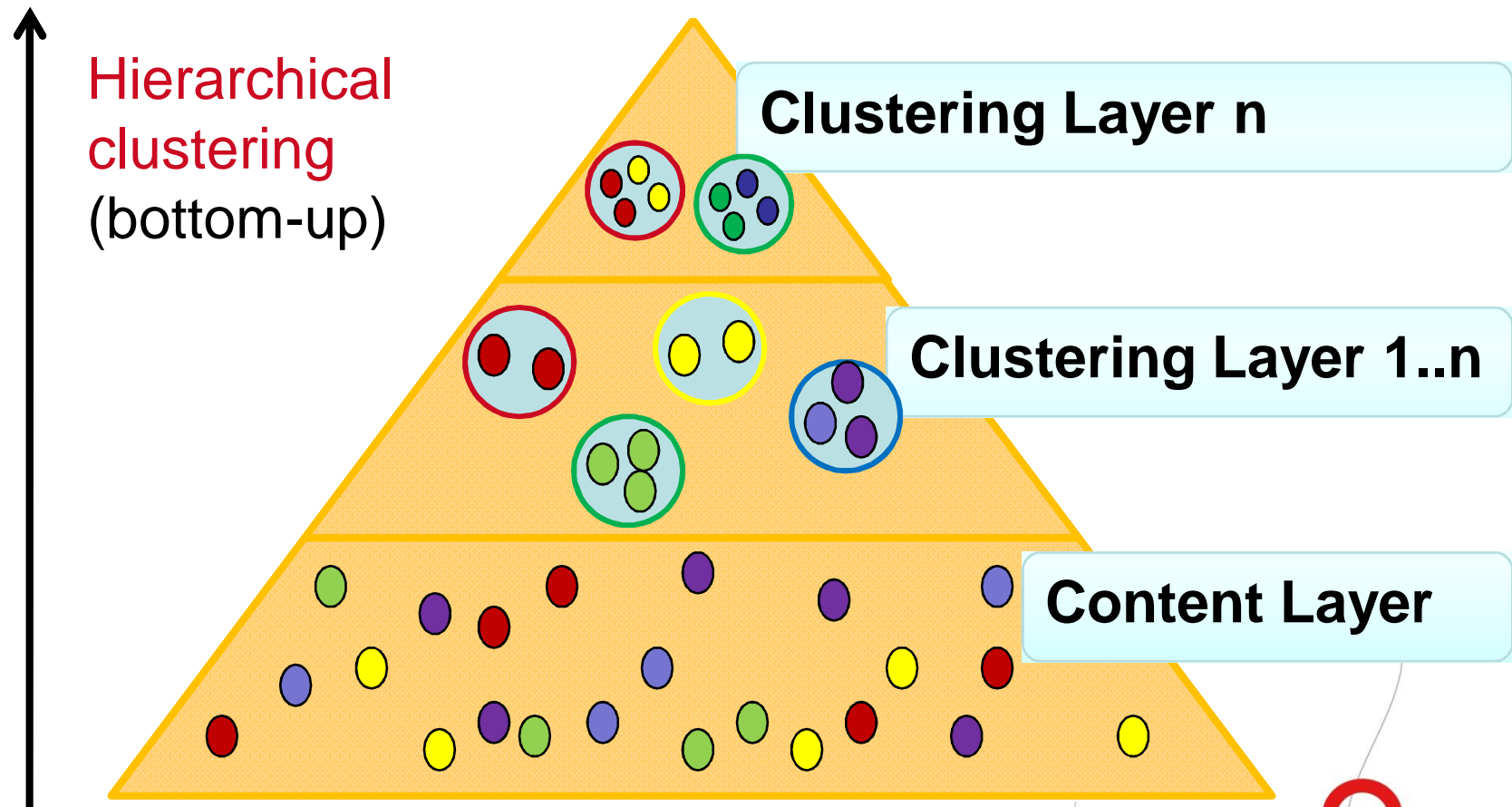
*Learning settings, environmental conditions
and the task greatly affect the design of
recommender systems in TEL.*



Formal recommendation approach



Informal recommendation approach



Research question

How can we get the best out of both worlds?



A solution for formal learning



Peer Reviews

For more pearls of wisdom from your peers, read reviews! Each review contains the reviewer's personal rating, grade, term and year the class was taken, the lecturer who taught the class, as well as the reviewer's comments. This information allows you to read the reviewer's comments with perspective. In addition, you can selectively read the comments that pertain to your lecturer or see the most-agreed with comments.

CourseRank Reviews Screenshots

CS 107

Computer Organization and Systems

Introduction to the fundamental concepts of computer systems. Explores how computer systems execute programs and manipulate data, working from the C programming language down to the microprocessor. Topics covered include: the C programming language, data representation, machine-level code, computer ... [\(see all\)](#)

Units: 3.0-5.0
GERs: DB-EngrAppSci

Schedule Information

+ Autumn 2009-2010
Julie Zelenski

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Related Courses

SYMBSYS 107
Programming Paradigms

EE 184
Programming Paradigms

DBIL 10S

Overview | **Students** | **Books** | **Evals** | **Ask (6)**

Overall Rating: ★★★★★
Your Rating: ★★★★★

B+
average grade

Official Average
> 15 hours of work / week

Overall Grade Distribution
314 Students. Official data.
[View CourseRank Data](#)

50%	40%	30%	20%	10%	0%							
A+	A	A-	B+	B	B-	C+	C	C-	D	F	CR	NC

Reviews | [Write a Review](#)

date	reputation	rating	grade
★★★★★ Spring 2008-2009 Julie Zelenski A	+3 Reputation		
The material for this class is very interesting. Basically, 107 really helps to bridge that gap between what you do as a programmer and what's actually going on with the computer. Zelenski is a great teacher and she's a nice, approachable person. The later projects we did -- Binary Bomb, Crash Reporter, and Heap Allocator -- were really cool and very gratifying. The only real complaints I have about this class are that grading took forever and it would normally take like an hour or two of waiting at office hours before the TAs would get to you, which was very frustrating especially if you only had a quick question or problem.			
Posted on 2009-06-18			
Agree Disagree Report			
User had not rated this course at the time of reviewing			
+3 Reputation			
I took this class with Cain--he was a great lecturer and taught the material well. There are a lot			

A solution for informal learning




Re Mashed
Recommendations for Mash-ups

- 100 user (hopefully some more after today ☺)
- 20000 Web 2.0 items (increasing every hour)
- 700 ratings in the data base
- 10000 tags in the data base



Version 1.0

**ReMashed**
Recommendations for Mash-ups

Signed in as hendrik.drachsler@ou.nl | Home | Change settings | Sign out

DELICIOUS

posted by nogmaareentest@test.nl on May 26, 2009 2:11:25 PM
Get More Twitter Followers! - FeaturedUsers.com
Costs, but might be worth considering in the future if things really take off with Twitter
twitter tool network
☆☆☆☆☆

posted by test5@test.be on May 26, 2009 2:10:20 PM
FIRE SAFETY TRAINING AT WORK & AT HOME
Fire safety
☆☆☆☆☆

posted by teletubbie@bnn.nl on May 26, 2009 11:14:23 AM
Ask SM: CSS Quick-Question Edition | CSS | Smashing Magazine
css Tips webdevelopment tutorials
☆☆☆☆☆

posted by nogmaareentest@test.nl on May 26, 2009 11:11:30 AM
The Science Creative Quarterly » ON KINGDOMS AND THE GALAPAGOS ISLANDS: A TREATISE ON DARWIN'S CONTRIBUTIONS TO MODERN ECOLOGY AND EVOLUTION IN CALIFORNIA
previous items

BLOG

posted by test2@test.com on May 22, 2009 2:10:46 AM
Digital Campus #42 - The Real World
This week's podcast looks at the fake, the real, the copies, and the bizarre: fake journals from Elsevier, the MPAA telling teachers to film their TVs, the University of Michigan asking for real uses for its copies of Google's book...
☆☆☆☆☆

posted by test2@test.com on May 15, 2009 4:21:51 AM
Zotero 2.0 Is Here!
After an extensive development and testing period and the addition of even more features to make academic research easier, more collaborative, and ready for the future, Zotero 2.0 went public tonight. I'll be blogging extensively about...
☆☆☆☆☆

posted by test2@test.com on May 13, 2009 2:01:37 AM
Idealism and Pragmatism in the Free Culture Movement
[A review of Gary Hall's Digitize This Book! The Politics of New Media, or Why We Need Open Access Now (University of Minnesota Press, 2009). Appeared in the May/June 2009 issue of Museum.] Beginning in
previous items

FLICKR

england kent dover templewell jelltex jelltecks ianhaddingham
☆☆☆☆☆

posted by test6@test6.de on May 26, 2009 9:29:05 AM
Kearsney Station, Dover
previous items

SLIDESHARE

posted by teletubbie@bnn.nl on May 22, 2009 6:58:09 AM
Naming A Business, Product Or Service
Keeping a Business name, name of a product and service is as important as the business, product or service itself. Have a look at the different types of names and

BEST RATED ITEMS OF THE WEEK

BLOG

posted by test@test.com on Mar 6, 2009 10:12:39 AM
ReMashed evaluation week 3
This time we decided to offer a qualitative evaluation of the ReMashed system. Therefore, we ask the contributor of the week Dr. Wolfgang Greller (best rated item in cat.: bookmark, picture and blog posting) for a short interview regarding his...
ReMashed interview greller recommender experiment emergence

SLIDESHARE

posted by teletubbie@bnn.nl on May 12, 2009 1:39:05 PM
Innovation
What is Innovation, Why is it important and lots more covered in this 101 on Innovation
innovation ideas property sciencetechnology commercialize

YOUTUBE

posted by hendrik.drachsler@ou.nl on May 12, 2009

RATING BASED RECOMMENDATIONS

posted by tanja@tanja.nl on May 16, 2009 7:00:13 AM
Social Freelance Jobs & Open Outsourcing
Freelance job sites with social industry infrastructure called "open outsourcing" a brief presentation I gave at Jobcamp. Enjoy!

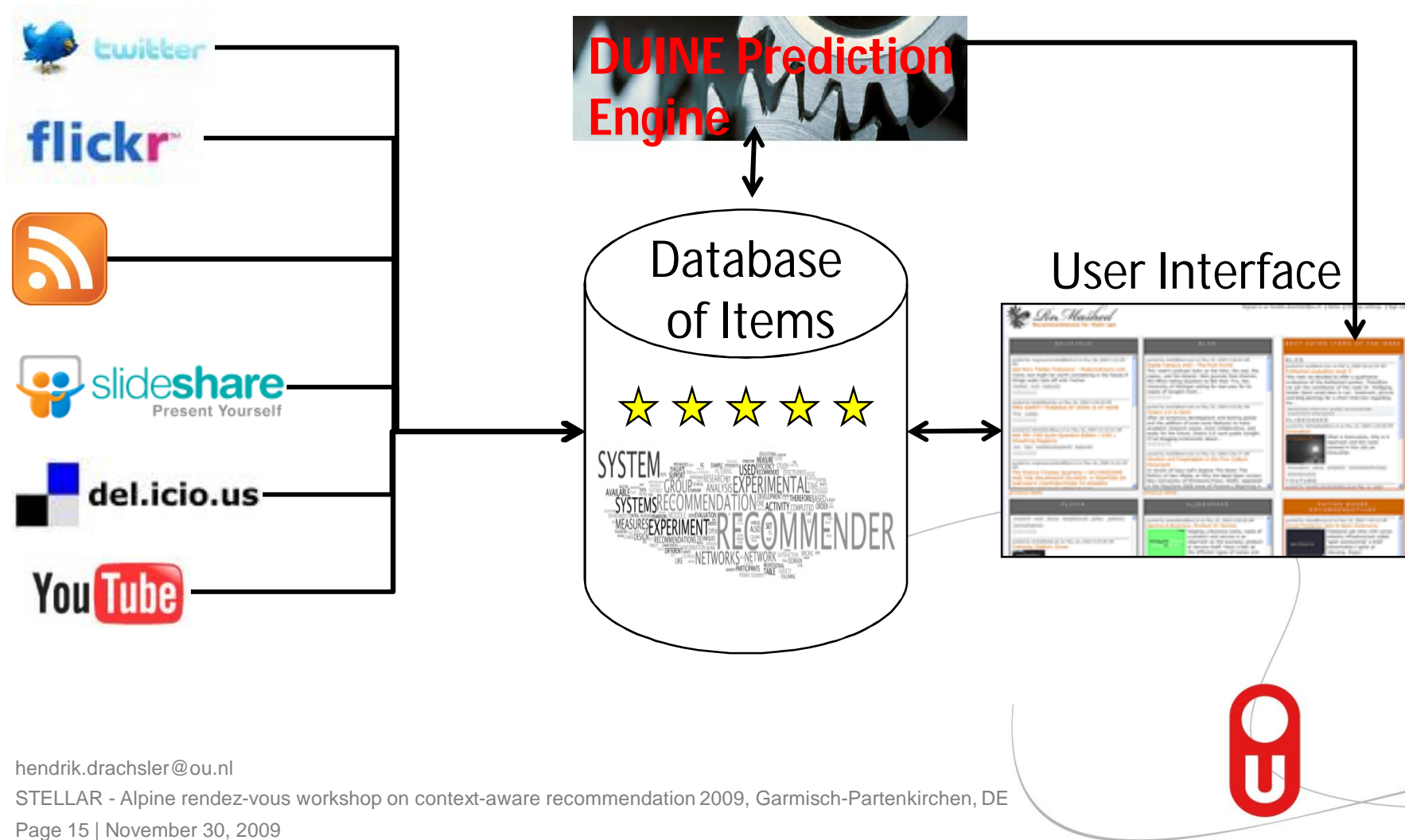
hendrik.drachsler@ou.nl

STELLAR - Alpine rendez-vous workshop on context-aware recommendation 2009, Garmisch-Partenkirchen, DE

Page 14 | November 30, 2009



Version 1.0



How does it work?

Cold-Start = Tag-based recommendation



Collaborative Filtering with ratings



Learner profile

Delicious username:	<input type="text"/>	<p>It is mandatory to specify at least one Web 2.0 service.</p> <p>If you specify more than one Web 2.0 service we can predict better recommendations for you.</p>
Flickr username:	<input type="text"/>	
Blog Rss feed of blog:	<input type="text"/>	
Slideshare username:	<input type="text"/>	
Youtube username:	<input type="text"/>	
Twitter username:	<input type="text"/>	

Interest A:	<input type="text" value="technology enhanced learnir"/>	<p>Please specify three main interests and your knowledge level in the particular interest.</p> <p>0 = Beginner 5 = Expert</p>
Knowledge Level A:	<div>0 1 2 3 4 5</div> <div><div></div></div>	
Interest B:	<input type="text" value="language learning"/>	
Knowledge Level B:	<div>language learning</div> <div>language technology</div>	<p><i>How can we match the context of learners?</i></p>
Interest C:	<input type="text"/>	
Knowledge Level C:	<div>0 1 2 3 4 5</div> <div><div></div></div>	



Conclusions

Delicious username:

Flickr username:

Blog Rss feed of blog:

Slideshare username:

Youtube username:

Twitter username:

It is mandatory to specify at least one Web 2.0 service.

If you specify more than one Web 2.0 service we can predict better recommendations for you.

Fed by bottom-up approach

Interest A:

Knowledge Level A: 0 1 2 3 4 5

Interest B:

Knowledge Level B:

Interest C:

Knowledge Level C: 0 1 2 3 4 5

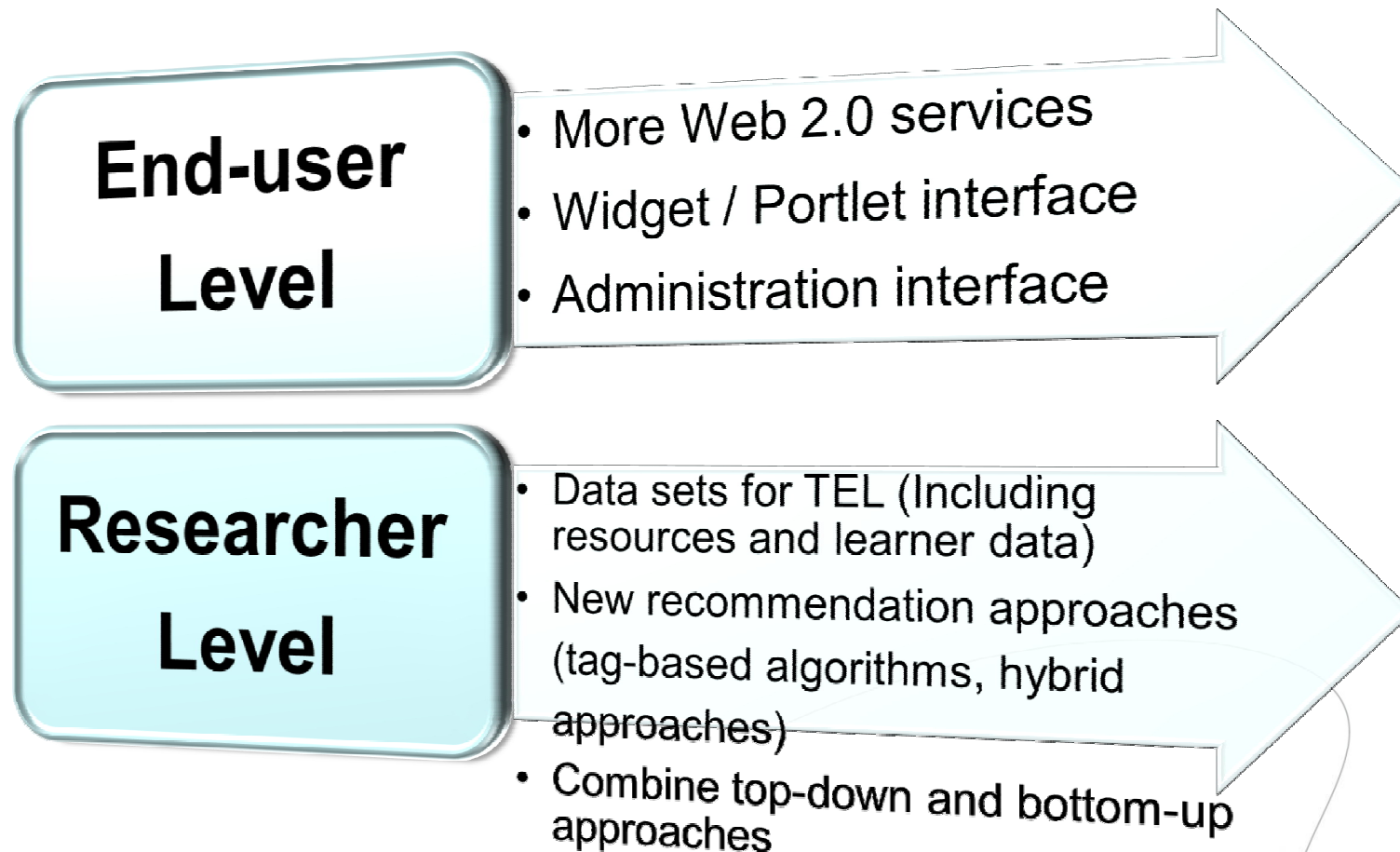
Please specify three main interests and your knowledge level in the particular interest.

0 = Beginner 5 = Expert

Fed by top-down approach

How to combine?

Future R&D



Many thanks for your interest!

This slide is available here:

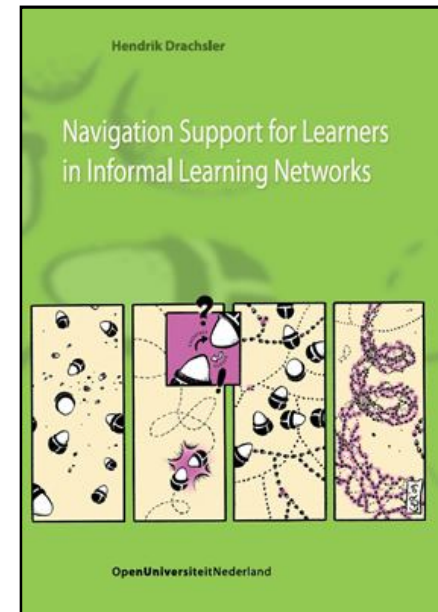
<http://www.slideshare.com/Drachsler>

Email: hendrik.drachsler@ou.nl

Skype: [celstec-hendrik.drachsler](https://www.skype.com/en/contacts/celstec-hendrik.drachsler)

Blogging at: <http://elgg.ou.nl/hdr/weblog>

Twittering at: <http://twitter.com/HDrachsler>



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